OCT 5 ' 2007

K072087

510(k) Summary

Date:	June, 19, 2007
Submitter's Name / Address:	Belimed Sauter AG Zelgstrasse 8 CH- 8583 Sulgen / Switzerland
Contact Person:	Hans Stadler, Head of Product Development, Email: hans.stadler@belimed-sauter.ch Phone: +41 71 644 85 97 Fax: +41 71 644 86 00
Trade Name:	Belimed Steam Sterilizer TOP 5000 **Series 24**
Classification:	Steam Sterilizer – Class II, as listed per 21 CFR 880.6880
Predicate Devices:	Belimed Steam Sterilizer TOP 5000 **Series 9 - 18 (K021223)** and **Series 4-8 (K033538)**

DEVICE DESCRIPTION:

The Belimed Steam Sterilizers TOP 5000 **Series 24** is intended for use in hospital and health care facilities and is intended to be used in an identical manner as the Belimed Steam Sterilizer TOP 5000 **series 9 – 18.**

The larger chamber size (higher chamber) incorporates additional flexibility, and allows operating the sterilizers in an economical way (less floor space required).

NONCLINICAL COMPARISON TO THE PREDICATE DEVICE:

The Belimed Steam Sterilizer TOP 5000 **series 24**, are very similar to the predicate device.
Modifications made from the predicate device include:

- Larger chamber size (chamber height increased)
- Vacuum-pump power was increased according to larger chamber volume.
- Improved functionallity (as done for series 4-8 K033538)

CLINICAL DATA

No clinical data is required for this device classification submission

INDICATIONS FOR USE:

The Belimed Steam Sterilizer TOP 5000 **series 24** is designed for sterilization of non porous and porous heat and moisture-stable materials used in healthcare facilities.

The Belimed Steam Sterilizer TOP 5000 **series 24** is equipped with the following factory-programmed Sterilization cycles and cycle values, which correspond with Series 9-18 (Table 1).

CYCLES	STERILIZE TEMP	STERILIZE TIME(min)	DRY TIME (min)	RECOMMENDED LOAD
PREVAC 270° F (132°C)	270° F (132°C)	4	20	Double-wrapped Instrument Trays, max. weight of 20 lbs (9 kg) each or Fabric packs. *Refer to Table 2 for recommended quantities.*
PREVAC 270° F (132°C)	270° F (132°C)	4	5	Fabric Packs. *Refer to Table 2 for recommended quantities Packs are to place horizontally on shelves*
LIQUID 250° F (121°C)	250° F (121°C)	45	-	Liquids not intended for direct patient contact! *Refer to Table 3 for Guidelines*
EXPRESS 270° F (132°C)	270° F (132°C)	4	3	Single Wrapped Instrument Tray with non porous single instrument
FLASH 270° F (132°C)	270° F (132°C)	3	1	Unwrapped Instrument Tray with a single Instrument
FLASH 270° F (132°C)	270° F (132°C)	10	1	Unwrapped Instrument Tray with non porous multiple instruments (max. weight of 20 lbs)

Table 1: Factory programmed sterilization cycles

The following table (Table 2) shows BELIMED SAUTER AG's recommended load by sterilizer sizes: Do not sterilize a mix load of instrument trays and Fabric packs.

Series	Model single door *double door*	Sterilizer Chamber Size (HxWxD)	Wrapped Instrument Trays 20"x10" max. 20 lbs each	Fabric Packs 11"x11"x9" max.6.6 lbs each	Fabric Packs 23"x11"x11" max. 17 lbs each
24	GR15-6-18 HS1 *GR15-6-18 HS2*	63"x26"x79"	24	56	24

Table 2: Recommended Loads

The following table (Table 3) is BELIMED SAUTER AG's guidelines for liquid cycle processing for models:

Series	Model single door *double door*	Sterilizer Chamber Size (HxWxD)	Volume of Liquid in one bottle	Max. number of bottles
24	GR15-6-18 HS1 *GR15-6-18 HS2*	63"x26"x79"	1000 ml	336

Table 3: Guidelines for liquid 250°F cycle processing

The Belimed Steam Sterilizer TOP 5000 **Series 24** are offered in the following size configurations:

Model	Con-figuration	Chamber size (H x W x D) (inch)	(mm)	Overall Dimensions (H x W x D) (inch)	(mm)
GR 15-6-18 HS1	Floor flush design, 1 door	63"x 26"x 79"	1600x 660x 2000	79"x 75"x 98"	2000x 1900x 2500
GR 15-6-18 HS2	Floor flush design, 2 doors	63"x 26"x 79"	1600x 660x 2000	79"x 75"x 98"	2000x 1900x 2500

Table 4: Dimensions

The Belimed Steam Sterilizer TOP 5000 **Series 24** is designed to be used for the terminal Sterilization of porous and non porous, heat and moisture stabile materials in the healthcare facilities.
Depending of the chosen cycle materials as different as textiles, glassware, unwrapped or wrapped instrument trays with single or multiple instruments may be sterilized.

The Belimed Steam Sterilizer TOP 5000 **Series 24** is factory equipped with cycles which has been tested in accordance with AAMI/ANSI ST-8:2001 under defined load conditions. The predicate devices with a chamber volume between 752 l (series 9) and 1900 l (series 18) have been tested in 2002. The new models have a chamber volume of 2480 l.
The sterilizer has been validated.

EFFECTIVENESS:

Efficacy of sterilizer function and exposure time recommendations are ultimately shown by complete kill of biological indicators and verifying an appropriate safety factor or sterility assurance level (SAL) of at least 10^{-6} reduction. BELIMED SAUTER AG validates its sterilization cycles by recommended practices, standards and guidelines developed by various independent organizations such as the Association for Advancement of Medical Instrumentation (AAMI). Prior to release, Belimed Steam Sterilizer TOP 5000 series 24 was validated to meet the requirements of AAMI/ANSI-ST8-2001.

The results of the Belimed Steam Sterilizer TOP 5000 verification studies demonstrate that the sterilizer performs as intended and are summarized as follows:

- All PREVAC cycles verified using the fabric test pack, as described in Section 5.5.2 AAMI/ANSI-ST8:2001 were qualified according to section 5.5.2.5 ANSI/AAMI-ST8. These cycles demonstrated a sterility assurance level of at least 10^{-6} through achievement of a time-at-temperature sufficient to produce an F0 of at least 12 by half cycle, moisture retention of less than 3% increase in pre-sterilization test pack weight, and exhibited no wet spots.
- All PREVAC cycles verified using full load instruments trays were qualified according to section 5.5.4 of ANSI/AAMI-ST8: 2001. These cycles demonstrated a sterility assurance level of at least 10^{-6} through achievement of a time-at-temperature sufficient to produce an F0 of at least 12 by half cycle, moisture retention of less than 20% increase in pre-sterilization weight of the towel, and exhibited no wet spots on the outer wrapper.

- All FLASH cycles verified using the unwrapped instrument tray were qualified according to section 5.5.5.1 AAMI/ANSI-ST8:2001 and ANSI/AAMI ST37:1996 section 7.7.3. These cycles demonstrated a sterility assurance level of at least 10^{-6} through achievement of a time-at-temperature sufficient to produce an F0 of at least 12 by half cycle and exhibited no wet spots.
- All LIQUID cycles verified using three 1'000 ml flasks, as described in section 5.5.3 of AAMI/ANSI-ST8:2001 were qualified according to section 5.5.3.5. These cycles demonstrated a sterility assurance level of at least 10^{-6} through achievement of a time-at-temperature sufficient to produce an F0 of at least 12 by half cycle, a water loss not exceeding 50 ml, and automatic sealing of the flask closure. A temperature of 121°C was achieved and maintained in the center of the liquid for at least 12 minutes.
- The BD cycle was verified using the Bowie-Dick Test Pack were qualified according to section 5.6 of AAMI/ANSI-ST8, and demonstrated a uniform color change throughout the test sheet.
- The software validation for the cycle operation was performed according to FDA's moderate level of concern recommendations provided in the document *"Guidance for the Content for Pre-market Submissions for Software Contained in Medical Devices (May 2005)"*.

SAFETY:

BELIMED SAUTER AG's sterilizers including the Belimed Steam Sterilizer TOP 5000 have been designed, constructed and tested to meet the safety and performance requirements of various national safety codes and standards. The Belimed Steam Sterilizer TOP 5000 complies with the following requirements:

1. Underwriter Laboratory (UL) Code UL 61010A-1:2002 and UL 61010A-2-041:2002 and IEC 61010-1:2001 and IEC 61010-2-041:1995
2. IEC / EN 61326:2001
3. AAMI ST8:2001
4. AAMI ST37:1996
5. American Society of Mechanical Engineers (ASME), Section VIII, Division 1 for unfired pressure vessels: 2004.

HAZARDS-FAILURE OF PERFORMANCES

Failure of the sterilization process can lead to incidence of cross contamination, the transmission of potentially infectious organisms from one infected person to another who was not otherwise infected prior to the incident.

To avoid failure, the user must ensure the materials, instruments and devices to be sterilized are thoroughly cleaned, that the manufacturer's instructions for use are followed., that the cycle to be used for each type of sterilizer load has been validated, that the sterilizer has been maintained in accordance with the sterilizer's manufacturer's maintenance schedule and is operating properly, and that each sterilizer load is monitored with available and validated biological and chemical sterilization process indicators.

Today, there are many steam sterilizers in daily use in hospitals throughout the United States. The incident of sterilizer malfunction or sterilization process failure is relatively rare considering the wide spread use of steam sterilizers. Further, there are no known reports in the literature of patient infection that have resulted from steam sterilizer failure. The technology designed in Belimed Steam Sterilizer TOP 5000 provides microprocessor controller safeguard that aborts the cycle and give appropriate signals, alerts and warnings when required conditions have not been met or when a malfunction occurs.

USER INFORMATION

BELIMED SAUTER AG provides information to the user that is intended to insure safe and effective use of steam sterilization in its detailed Operator's Manual and other labeling. BELIMED SAUTER AG also recommends the use and periodic review of the AAMI steam sterilization standards to ensure further assurance of the safe and effective use of steam sterilization equipment in health care facilities.

CONCLUSION

The Belimed Steam Sterilizer Top 5000 Series 24 is a substanially equivalent device to that of the predicate device. There have been no substantial changes in technology and intended use of this device. The control system and the hardware interface remain unchanged to predicate device series 4-8 (K033538). This steam sterilizer meets the appicable requirements of the applicable standards. Based on the provided information in this premarket notification, it can be concluded that the subject device is substantial equivalent to the predicate device and is safe and effective when used as intended.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
9200 Corporate Boulevard
Rockville MD 20850

Belimed Sauter AG
C/O Mr. Stefan Preiss
Responsible Third Party Official
TUV SUD America, Incorporated
1775 Old Highway 8 NW
New Brighton, Minnesota 55112-1891

OCT 5 2007

Re: K072087
Trade/Device Name: Belimed Steam Sterilizer TOP 5000
Regulation Number: 880.6880
Regulation Name: Steam Sterilizer
Regulatory Class: II
Product Code: FLE
Dated: September 20, 2007
Received: September 24, 2007

Dear Mr. Preiss:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to such additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

This letter will allow you to begin marketing your device as described in your Section 510(k) premarket notification. The FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and thus, permits your device to proceed to the market.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please contact the Office of Compliance at (240) 276-0115. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 443-6597 or at its Internet address http://www.fda.gov/cdrh/industry/support/index.html.

Sincerely yours,

Chiu Lin, Ph.D.
Director
Division of Anesthesiology, General Hospital,
Infection Control and Dental Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

Indications for Use

510(k) Number (if known):

Device Name: **Belimed Steam Sterilizer TOP 5000**

Indications for Use:

The Belimed Steam Sterilizer TOP 5000, series 24, is designed for sterilization of non porous and porous heat and moisture-stable materials used in healthcare facilities.

The Belimed Steam Sterilizer TOP 5000, series 24, is equipped with the following factory-programmed Sterilization cycles and cycle values (Table 1).

The Belimed Steam Sterilizer TOP5000, series 24, is available as a single door prevacuum or a double door prevacuum version.

Prescription Use _____ AND/OR Over-The-Counter Use x OTC
(Part 21 CFR 801 Subpart D) (21 CFR 807 Subpart C)

Concurrence of CDRH, Office of Device Evaluation (ODE)

(Division Sign-Off)
Division of Anesthesiology, General Hospital, Infection Control, Dental Devices

510(k) Number: K072087

CYCLES	STERILIZE TEMP	STERILIZE TIME(min)	DRY TIME (min)	RECOMMENDED LOAD
PREVAC 270° F (132°C)	270° F (132°C)	4	20	Double-wrapped Instrument Trays, max. weight of 20 lbs (9 kg) each or Fabric packs. Refer to Table 2 for recommended quantities.
PREVAC 270° F (132°C)	270° F (132°C)	4	5	Fabric Packs. Refer to Table 2 for recommended quantities Packs are to place horizontally on shelves.
LIQUID 250° F (121°C)	250° F (121°C)	45	0	Liquids not intended for direct patient contact! Refer to Table 3 for Guidelines
EXPRESS 270° F (132°C)	270° F (132°C)	4	3	Single Wrapped Instrument Tray with non porous single instrument
FLASH 270° F (132°C)	270° F (132°C)	3	1	Unwrapped Instrument Tray with a single Instrument
FLASH 270° F (132°C)	270° F (132°C)	10	1	Unwrapped Instrument Trays with non porous multiple instruments (max. weight of 20 lbs)

Table 1: Factory programmed Sterilization Cycles

The following table (Table 2) shows Belimed Sauter AG's recommended load by sterilizer size:

Do not sterilize a mix load of instrument trays and fabric packs.

Series	Model single door *double door*	Sterilizer Chamber Size (HxWxD)	Wrapped Instrument Trays 20"x10" max. 20 lbs each	Fabric Packs 11"x11"x9" max.6.6 lbs each	Fabric Packs 23"x11"x11" max. 17 lbs each
24	GR15-6-18 HS1 *GR15-6-18 HS2*	63"x26"x79"	24	56	24

Table 2: Recommended Loads

The following table (Table 3) is Belimed Sauter AG's guidelines for liquid cycle:

Series	Model single door *double door*	Sterilizer Chamber Size (HxWxD)	Volume of Liquid in one bottle	Max. number of bottles
24	GR15-6-18 HS1 *GR15-6-18 HS2*	63"x26"x79"	1000 ml	336

Table 3: Guidelines for liquid 250°F cycle processing

Division Sign-Off)
Division of Anesthesiology, General Hospital,
Infection Control, Dental Devices

510(k) Number K072087